

# **EXHIBIT G**

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Anatomic Pathology  
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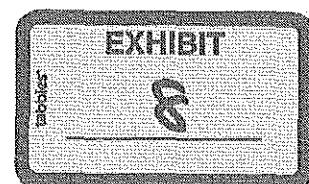
Re: Guthrie vs. Ball, et al

I have reviewed materials that have been furnished to me concerning the matter of Guthrie vs. Gall, et al. These materials include:

1. Plaintiff's Rule 26 a 2 Expert Witness Disclosure.
2. Autopsy report by James Metcalfe, M.D.
3. James Metcalfe, M.D., personal file
4. Death Certificates
5. Records of Gregory Ball, M.D.; Consultants in Pain Management
6. Records of Gregory Ball, M.D.: Chattanooga Pain Surgery Center
7. Records from Whitfield EMS
8. Records from Memorial Hospital
9. Records from Erlanger Medical Center
10. Allen Sherwood, M.D. records: Erlanger East Family Medicine
11. Erlanger East Imaging records
12. David Rankine, M.D. records: Erlanger Neurology Associates
13. Nerve Conduction Study done 12/4/2009
14. OrthoSouth records: John Dorzias, M.D.
15. Matthew Bagamery, M.D. records
16. J. Mitch Frix records: Associates in Orthopedics and Sports Medicine
17. Walgreen's Pharmacy records,
18. Whitfield County Health Department Records
19. Records of Dr. Ballard
20. Complaint
21. Hamilton Medical Center records for 3/24/2010 admission, until death
22. Depositions of James Metcalfe, M.D., Karen Guthrie, and Gregory Ball, M.D.

Donald Guthrie was a 48 year old male who was morbidly obese; at the autopsy examination, he weighed 333.5 pounds. He had a notable history of chronic left knee pain, and had been treated with three nerve blocks. The knee pain was exacerbated by a myriad of physical activities. He also carried the diagnosis of a seizure disorder, and his medications included Keppra, Pepcid, Metformin, Verapamil, Lamictal, Topamax,

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Dr. Kris L. Sperry

3/14/2014

Page 2 of 5

and Neurontin. He had previous recent prescriptions for Morphine 30 mg, Hydromorphone 2 mg, and Fentanyl 50 mcg/hour patches. He had also received a prescription for Fentanyl patches that delivered 75 mcg/hour on March 4, 2010. A MRI scan of the left knee revealed a medial meniscal tear, and on 3/23/2010, he underwent arthroscopy and excision of the torn meniscal fragment. He had been using the 75 mcg/hr Fentanyl patch prior to the surgery, and there is no record from his wife's testimony (or other source) that he experienced oversedation or other signs and symptoms relating to the Fentanyl patch. One of the patches was still on his arm when he was being prepared for the arthroscopy. Following the surgery, his wife related that he was awake and conversing with her, and was discharged. When they arrived home, Mrs. Guthrie placed another Fentanyl 75 mcg/hr patch on his back. Mr. Guthrie ate lunch, and also took a Dilaudid (Hydromorphone) pill at bedtime; he may have also taken an Ambien. Mrs. Guthrie testified that Mr. Guthrie "got up" to urinate, with her assistance, "two or three" times during the night, during which he physically stood with her help. In the morning, she checked on him at least twice, during which times he appeared to be sleeping. Then, she noticed that she could not hear his snoring, and she found him to be unresponsive. Whitfield EMS was called on 3/24/2010 at 1036 hours, and they arrived to find Mr. Guthrie in asystole. Aggressive resuscitation was initiated, and he was transferred to Hamilton Medical Center. His heart beat was restored, but he was extremely acidotic with a blood pH of 6.5. Significant ST depression was noted in the inferior and lateral ECG leads. He was maintained on a ventilator until family could arrive from out of town, and he was pronounced dead at 0725 hours on March 25, 2010.

Mr. Guthrie had the diagnosis of chronic obstructive pulmonary disease, although he did not require medication to treat this condition. He had undergone a sleep study three years prior to his death, and although he had episodes of hypopnea, he had no severe hypoxemia, and was not diagnosed with sleep apnea. A CPAP machine noted at his dwelling belonged to his spouse.

An autopsy was conducted by Dr. James Metcalfe at the Hamilton County Medical Center on March 26, 2010, commencing at 0930 hours, approximately 26 hours after he had been pronounced dead. There are no records that any hospital admission blood from Hamilton Medical Center was requested by either Dr. Metcalfe or the coroner of Whitfield County. The autopsy was specifically notable in that Mr. Guthrie's heart weighed 740 grams, which is markedly enlarged, even taking into account his morbid obesity. Microscopically, the heart sections revealed fibrosis, increased adipose tissue in the right ventricular wall, and no coronary atherosclerosis, and Dr. Metcalfe raised the question of a dilated cardiomyopathy. On page 3 of his autopsy report, Dr. Metcalfe rendered the following FINAL ANATOMIC DIAGNOSES:

Dr. Kris L. Sperry

3/14/2014

Page 3 of 5

1. Edema and hyperemia of lungs, with focal early bronchopneumonia.
2. Left ventricular hypertrophy and dilatation of the heart (740 grams)
3. Fatty metamorphosis of liver.
4. Congestive splenomegaly (300 grams)
5. Emphysema of lungs, upper lobes, right and left.
6. Right pleural adhesions.
7. Status post arthroscopic surgery of left knee, 3/23/10, intact.
8. Congenital absence of right kidney.

Heart blood was retained during the autopsy. These specimens were not received for toxicologic analysis until April 27, 2010, and the analyses revealed:

Fentanyl 14 mcg/L (+/- 21%)

Lamotrigine 6.7 mg/L (+/- 21%)

Meperidine, Normeperidine, and Verapamil, all lowest than the lowest calibrator.

Although the autopsy report itself does not appear to have been amended, an email dated August 6, 2010, from Dr. Metcalfe to Bobby Dixon, Whitfield County Coroner notes that "This is a toxic Fentanyl level, 14 mcg/L (=ng/ml). Therapeutic level 1-3 ng/ml. The death certificate was issued on August 7, 2010, with the cause of death as: FENTANYL TOXICITY [due to or as a consequence of] DECEDENT TOOK FENTANYL.

Fentanyl is a lipophilic narcotic drug that is stored within the fatty tissues of the body. As such, fentanyl is subject to postmortem redistribution (PMR), which means that this drug will passively diffuse out of the fatty tissues in the body after death, into the blood, artificially raising the blood concentrations that are subsequently found by toxicologic analyses of the blood specimens. PMR is very well recognized to take place in heart blood samples, and thus, the preferred site for postmortem blood specimen collection is from peripheral sites, such as the iliac arteries and veins, or from sites within the major blood vessels in the pelvis. Current practice in forensic medicine dictates that blood samples for toxicologic analyses should preferentially be obtained from these peripheral sites, in the attempt to minimize PMR that is essentially inevitable in postmortem heart blood samples.

Another factor that has been revealed and confirmed with specific regard to Fentanyl through recent scientific studies is that the postmortem interval, or the time between death and when blood samples are collected, has a direct influence on exacerbating PMR. Thus, the longer the time between death and when blood samples are collected

Dr. Kris L. Sperry

3/14/2014

Page 4 of 5

for Fentanyl analysis, even if the samples come from peripheral vascular sources, the greater the PMR, with blood Fentanyl levels found that are often elevated to levels that are physiologically impossible to have occurred during lifetime. Repeated studies have been conducted that have sampled peripheral blood sequentially over time after death, and this PMR has been proven and documented. Older scientific literature that sought to establish "toxic" levels of Fentanyl in postmortem blood are out of date and inaccurate, and can be relied upon no longer. Presently, the opinions in published and peer reviewed medical literature regarding Fentanyl are that it is essentially impossible to retrospectively determine blood Fentanyl concentrations during life based upon postmortem blood Fentanyl levels, due to the PMR that occurs not only in heart blood samples, but also occurs and progresses with the passage of time after death. The postmortem biophysiology of Fentanyl is so widely variable and prone to erroneous elevation that it is not scientifically possible to render an opinion to a reasonable degree of medical certainty that Fentanyl is a causative or contributive factor in a death in an individual who has medical comorbidities that, in and of themselves, are potentially independent causes of death.

In Mr. Guthrie's case, no blood samples from his admission to Hamilton Medical Center were obtained, and he lived until the following day. Furthermore, the autopsy was performed yet the day after his death, on March 26, 2010. Given the scientific inaccuracy that is now known to be the fact in postmortem Fentanyl blood levels, it is my opinion, to a reasonable degree of medical certainty, that it is not possible to state with any degree of medical certainty what actual blood level of Fentanyl was present within Mr. Guthrie's blood immediately prior to his death, and thus, it is impossible to then state to any certainty whatsoever whether or not his Fentanyl blood level was within a toxic range, therapeutic range, or subtherapeutic range at the time of his cardiac arrest.

The autopsy examination revealed a markedly enlarged heart (740 grams; upper limits of normal approximately 450 grams), with fibrosis (scarring) in the microscopic sections. All scarring in the heart is abnormal, and this scarring, along with the severe enlargement, are indicative of either a primary hypertrophic and/or dilated cardiomyopathy, or at the least chronic ischemia due to the enlarged heart alone and the impaired microcirculation that occurs with such dramatic cardiac enlargement. Any experienced forensic pathologist would recognize these cardiac changes as being an adequate and expected cause of a sudden and unexpected death, even more so when coupled with morbid obesity and pulmonary emphysema, as was found at Mr. Guthrie's autopsy examination. Sudden cardiac arrhythmias in the setting of Mr. Guthrie's cardiac disease, obesity and emphysema are well known, and these conditions continuously place Mr. Guthrie at risk for a sudden death. The finding of "wet, heavy" lungs at the autopsy, after Mr. Guthrie had been on a ventilator in this hospital for

Dr. Kris L. Sperry

3/14/2014

Page 5 of 5

approximately 21 hours, is completely meaningless and cannot be relied upon as any supporting evidence that Fentanyl was the cause of death.

In summary, it is my opinion, to a reasonable degree of medical certainty, that it is medically and scientifically impossible to rely upon the postmortem blood Fentanyl levels as obtained from Donald Guthrie in the manner as occurred in the autopsy as being accurate and any way representative of his actual blood Fentanyl levels at and around the time of his cardiac arrest on March 24, 2010. The failure to collect and analyze blood specimens obtained immediately upon his admission to Hamilton Medical Center after his cardiac arrest also makes any opinions concerning both the presence of other medications in his blood at that time and their respective concentrations to be completely speculative. Furthermore, opinions regarding retrospective determination of antemortem Fentanyl levels is scientifically flawed and inaccurate, and thus unreliable, without scientific merit, and completely speculative. Finally, the autopsy examination revealed severe cardiac disease that, in and of itself, and coupled with his morbid obesity and pulmonary emphysema, would readily cause his sudden and unexpected death irrespective of any medication contribution.

All of the above opinions are rendered to a reasonable degree of medical certainty. I charge \$500/hour for the review of materials, \$750/hour for providing deposition testimony, and \$7500/day for live courtroom testimony, plus any additional travel and lodging expenses. My current Curriculum Vitae is attached, as well as a list of the cases in which I have provided deposition and courtroom testimony over the preceding four years.

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